REMARKS

The Official Action of November 21, 2005 has been carefully considered. Applicant appreciates the Examiner's thorough review of the application. The following changes and remarks are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

Claims 1-24, 26, 27 and 29-34 remain pending in this application and claims 2-5, 10, 11 and 13-19 are currently withdrawn from consideration. Claims 1, 22, 27 and 34 have been amended for clarification. Support for these amendments can be found in the specification and drawings. Thus, the amendments do not involved any issue of new matter or raise any new issue after final rejection. Claims 25 and 28 has been canceled by prior amendment. As set forth below, it is believed that claims 1-24, 26, 27 and 29-34 are in condition for allowance.

In the Official Action, the Examiner rejects claims 1, 7-9, 12, 21-24, 26, 29 and 30 under 35 U.S.C. §102(b) as being clearly anticipated by Harrington (U.S. Patent No. 2,722,792). Applicant respectfully traverses this rejection for the reasons stated more fully below.

Independent claim 1 recites a machining device for machining a surface of a workpiece including a tool and a fluid delivery system. The tool is at least partially formed from an abrasive material having an open cell porous structure, the tool includes a rotational axis and an outer peripheral surface radially disposed at a distance from the rotational axis, the outer peripheral surface includes a workpiece interface adapted to interface with and machine a surface of a workpiece at a machining zone. The fluid delivery system delivers fluid to the workpiece interface. The fluid delivery system is stationary and operative to disperse fluid to interface with the tool primarily at a contact location inboard from the outer

peripheral surface and to deliver the fluid into the tool for transmission into and through substantially the entire open cell porous structure of the tool to the workpiece interface. The contact location has a predetermined radial distance angle "a" from the machining zone.

Independent claim 22 recites a method which includes the steps of providing a workpiece; providing a tool at least partially formed from an abrasive material having an open cell porous structure, the tool including a rotational axis and an outer peripheral surface radially disposed at a distance from the rotational axis, the outer peripheral surface including a workpiece interface; providing a stationary fluid delivery system; dispersing fluid from the fluid delivery system such that the fluid is delivered into substantially the entire open cell porous structure of the tool after contacting the tool primarily at a contact location inboard from the outer peripheral surface of the tool, wherein the contact location has a predetermined radial distance angle "a" from a machining zone; rotating the tool about the rotational axis such that fluid is transmitted through substantially the entire open cell porous structure of the tool to the workpiece interface; and machining the workpiece with the workpiece interface of the tool at the machining zone.

Independent claim 27 recites a method of machining a workpiece which includes the steps of providing a workpiece; providing a tool at least partially formed from an abrasive material having an open cell porous structure, the tool including a rotational axis and an outer peripheral surface radially disposed at a distance from the rotational axis; providing a stationary fluid delivery device; dispersing fluid from the fluid delivery device such that the fluid contacts the tool primarily at a contact location inboard from the outer peripheral surface of the tool and is delivered into the open cell porous structure of the tool, wherein the contact location has a predetermined radial distance angle "a" from a machining zone; rotating the tool about the rotational axis such that fluid flows through substantially the entire

open cell porous structure; machining the workpiece with the outer peripheral surface of the tool at the machining zone, wherein a controlled radial discharge of fluid form the open cell porous structure is provided at the machining zone; and modifying parameters of the fluid delivery device to compensate for changes in material characteristics of the tool in order to assist in maintaining proper dispersal of fluid from the open cell porous structure at the machining zone.

Independent claim 34 recites a machining device for machining a surface of a workpiece. The machining device includes a tool, a fluid delivery system, and a deflection member. The tool is at least partially formed from an abrasive material having an open cell porous structure. The tool includes a rotational axis and an outer peripheral surface radially disposed at a distance from the rotational axis. The outer peripheral surface includes a workpiece interface adapted to interface with and machine a surface of a workpiece at a machining zone. The fluid delivery system is for delivering fluid to the workpiece interface. The fluid delivery system is operative to disperse fluid to interface with the tool primarily at a contact location inboard from the outer peripheral surface and to deliver the fluid into the tool for transmission into and through substantially the entire open cell porous structure of the tool to the workpiece interface. The contact location has a predetermined radial distance angle "a" from the machining zone. The deflection member assists in directing fluid to the contact location.

The Harrington reference discloses improved means for delivering liquid coolant to surfaces of grinding wheels spaced from the working surfaces thereof for delivery to the latter through the porous bodies of the grinding wheels (column 1, lines 15-19). Harrington discloses that delivery conduit extends from a suitable source of liquid coolant supply into respective annular channels to provide discharge of coolant into one of the circular channels

for gravity delivery thereto, whereby the rate of feed of coolant through each of the conduits is regulated as to merely drip into their respective cooperating channels (column 2, lines 30-42).

Independent claims 1, 22, 27 and 34 each recite limitations of the devices and methods directed to the delivery of the fluid wherein the contact location has a predetermined radial distance angle "a" from the machining zone, however, Harrington fails to teach such a limitation. In contrast, the Harrington reference discloses having conduits inside of channels to randomly disperse coolant into the channels to eventually travel through passages or holes in the wheel (column 2, lines 40-46). Moreover, Harrington teaches that the coolant merely drips into the channels (column 2, lines 39-42). The present inventive devices and methods as defined by independent claims 1 and 22 provide that the contact location where the fluid is dispersed has a predetermined radial distance angle "a" from the machining zone. Such positioning of the contact location relative to the machining zone provides that the coolant will be effectively dispersed through the grinding wheel between the contact location and the machining zone and not along other portions of the tool. Harrington fails to teach such relative positioning between the contact location and the machining zone. As such, Harrington does not anticipate the present inventive devices and methods as set forth in claims 1, 7-9, 12, 21-24, 26, 29 and 30. Accordingly, Applicant respectfully requests reconsideration and allowance of claims 1, 7-9, 12, 21-24, 26, 29 and 30.

In the Official Action, the Examiner rejects claims 1, 6, 9, 12, 21-24, 26, 29, 30 and 34 under 35 U.S.C. §102(b) as being clearly anticipated by Hatamoto et al (JP 11235670). Applicant respectfully traverses this rejection for the reasons stated more fully below.

The Hatamoto et al reference appears to teach adding liquid to a circular portion of a revolving grinding wheel, such that the liquid passes through pores in the grinding wheel due

to centrifugal force (English abstract).

As noted above, independent claims 1, 22, 27 and 34 each recite limitations of the devices and methods directed to the delivery of the fluid wherein the contact location has a predetermined radial distance angle "a" from the machining zone, however, Hatamoto et al fail to teach such a limitation. In contrast, the Hatamoto et al reference discloses randomly placing fluid into a center portion of a grinder wheel which will eventually pass through the porous wheel due to centrifugal force (English abstract and Fig. 1). The present inventive devices and methods as defined by independent claims 1, 22 and 34 provide that the contact location where the fluid is dispersed has a predetermined radial distance angle "a" from the machining zone. Such positioning of the contact location relative to the machining zone provides that the coolant will be effectively dispersed through the grinding wheel between the contact location and the machining zone and not along other portions of the tool. Hatamoto et al fail to teach such relative positioning between the contact location and the machining zone. As such, Hatamoto et al do not anticipate the present inventive devices and methods as set forth in claims 1, 6, 9, 12, 21-24, 26, 29, 30 and 34. Accordingly, Applicant respectfully requests reconsideration and allowance of claims 1, 6, 9, 12, 21-24, 26, 29, 30 and 34.

Claims 32 and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Harrington or Hatamoto et al. The Examiner asserted that Harrington and Hatamoto et al disclose that the tool is abrasive and that it would have been obvious to one of ordinary skill in the art to consider using a superabrasive material with such a tool. Applicant respectfully traverses this rejection. As discussed above for claim 1, from which claims 32 and 33 depend, the machining device is not anticipated by Harrington or Hatamoto et al, and the teachings of Harrington or Hatamoto et al do not overcome those deficiencies set forth above. In order for references to be relied upon to support a rejection under 35 U.S.C. § 103 they

must provide an enabling disclosure, i.e., they must place the claimed invention in the possession of the public. *Glaxo Inc. v. Novopharm Ltd.*, 34 U.S.P.Q.2d, 1565 (Fed. Cir. 1995); *In re Payne*, 203 U.S.P.Q. 245 (CCPA 1979). As such, Applicant respectfully requests reconsideration and allowance of claims 32 and 33.

Claims 20, 27 and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Harrington or Hatamoto et al in view of Wohlmuth (U.S. Patent No. 4,438,598). However, Applicant submits that claims 20, 27 and 31 are nonobvious and patentably distinguishable over Harrington or Hatamoto et al in combination with Wohlmuth. Accordingly, this rejection is traversed and reconsideration is respectfully requested. As discussed above, claims 1 and 22 from which claims 20 and 31 depend are not anticipated by Harrington or Hatamoto et al and the teachings of Wohlmuth (temperature monitoring system) do not overcome those deficiencies set forth above, as such, Applicant respectfully requests reconsideration and allowance of claims 20 and 31.

Independent claim 27 also recites the limitation the contact location has a predetermined radial distance angle "a" from the machining zone. Once again, Wohlmuth does not overcome this deficiency, and, as such, Harrington or Hatamoto et al alone or in combination with Wohlmuth fails to teach the present inventive methods of claim 27. Accordingly, for these reasons, Applicant respectfully request reconsideration and allowance of independent claim 27.

It is believed that the above represents a complete response to the Examiner's claim rejections, and therefore places the present application in condition for allowance. Applicant further requests reconsideration and allowance of claims 2-5, 10, 11 and 13-19 that were previously withdrawn by the Examiner since these claims depend directly or indirectly from allowable claim 1. Reconsideration and an early allowance of claims 1-24, 26, 27 and 29-34

is therefore respectfully requested.

Respectfully submitted,

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